loan accounts	coll. securities
L_1 (1.0)	S_1, S_2
L_2 (2.0)	S_1, S_2, S_3
L_3 (1.0)	S_1, S_3, S_4
L_4 (0.3)	S_1, S_3, S_4
L_5 (0.5)	S_1

coll. securities - values :

S_1 (2.4)
S_2 (1.5)
S_3 (0.5)
S_4 (0.3)

Fig. 1 (values: million US $)

(represented as a network in *Fig. 2*)

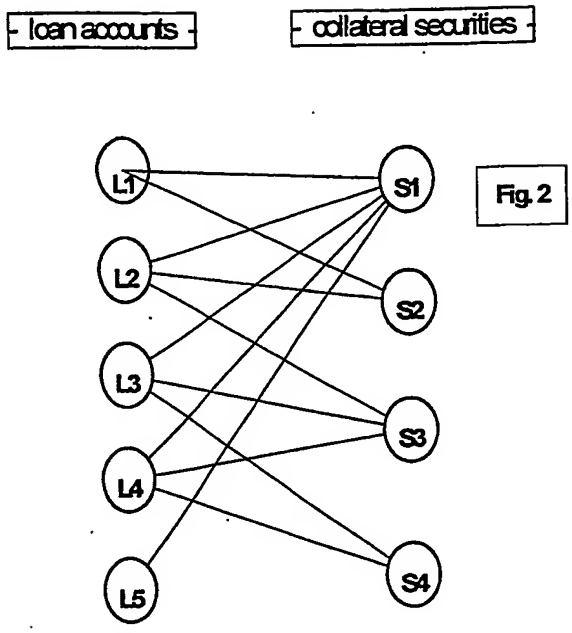

loan accounts
collateral securities
L1
L2
L3
L4
L5
S1
S2
S3
S4

Fig. 2

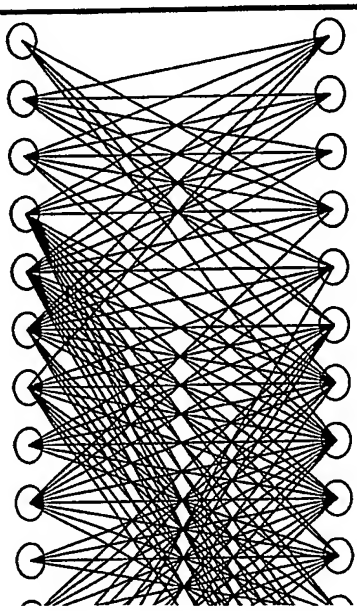
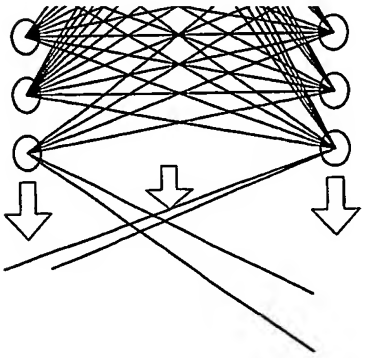


Fig. 3



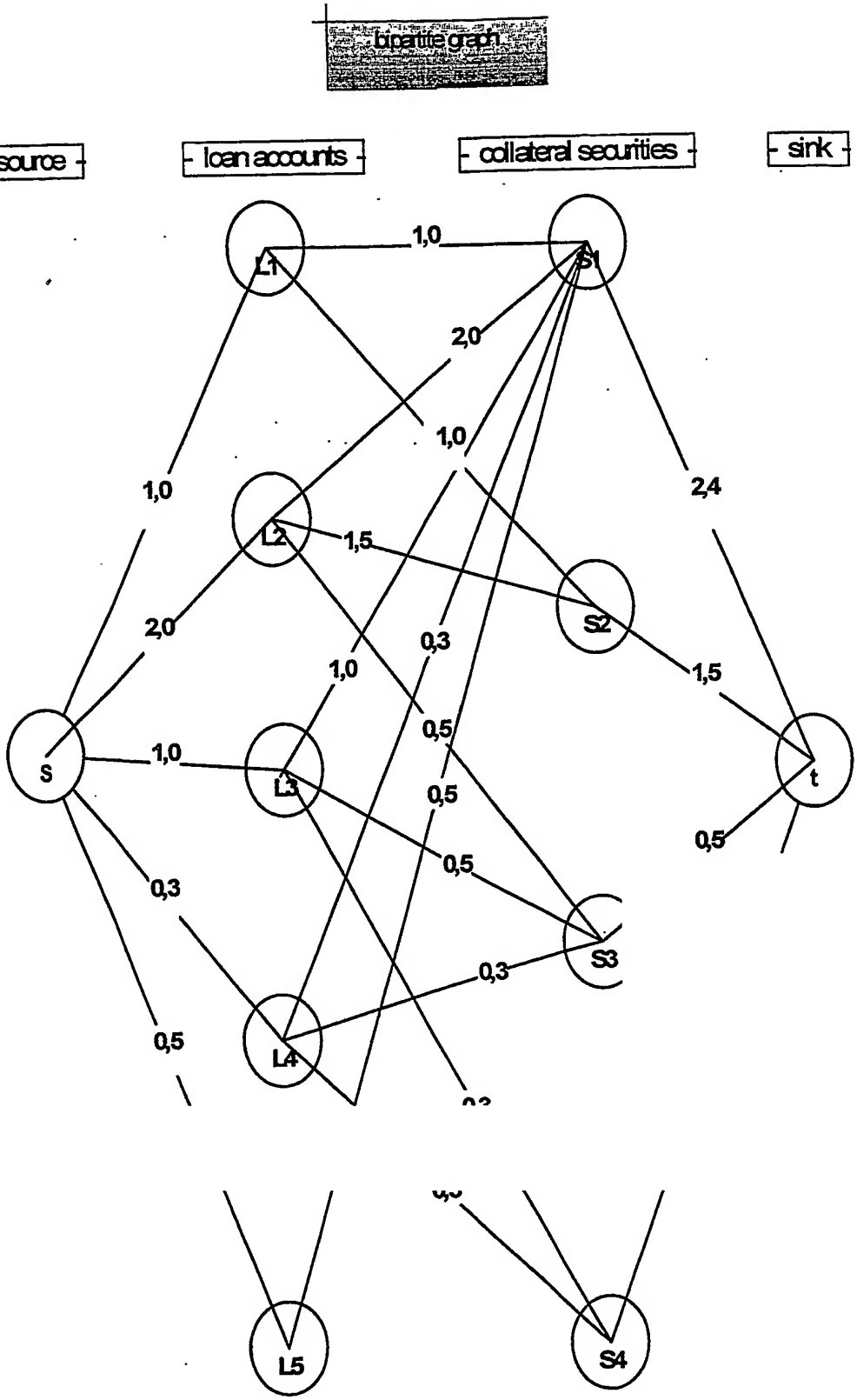

bipartite graph
source
loan accounts
collateral securities
sink
L1
L2
L3
L4
L5
S1
S2
S3
S4
s
t
1,0
2,0
1,0
1,0
2,4
1,5
2,0
0,3
1,0
1,5
0,5
1,0
0,5
0,5
0,3
0,3
0,5
0,5

Fig. 4

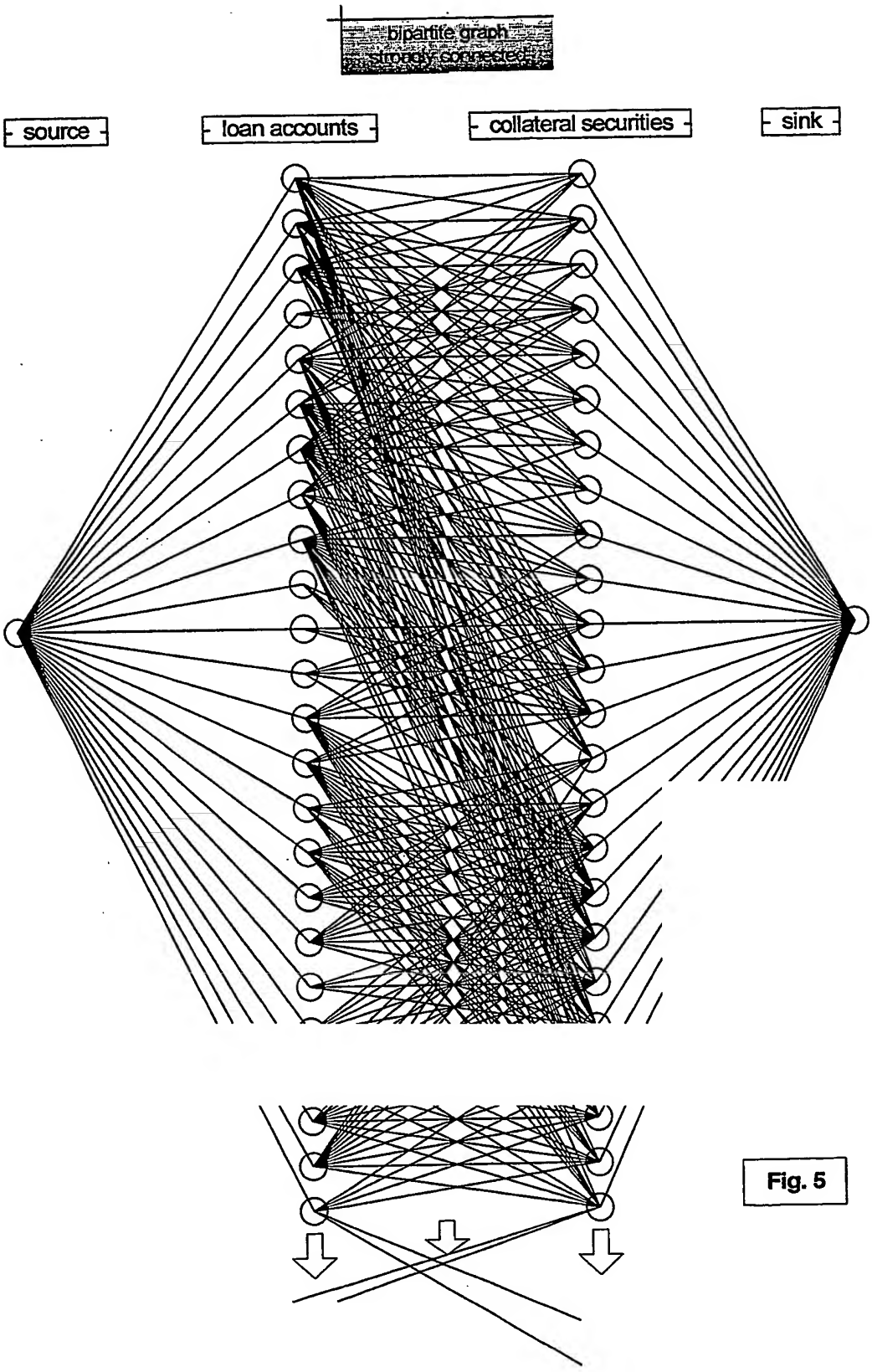

bipartite graph
strongly connected
source
loan accounts
collateral securities
sink

Fig. 5

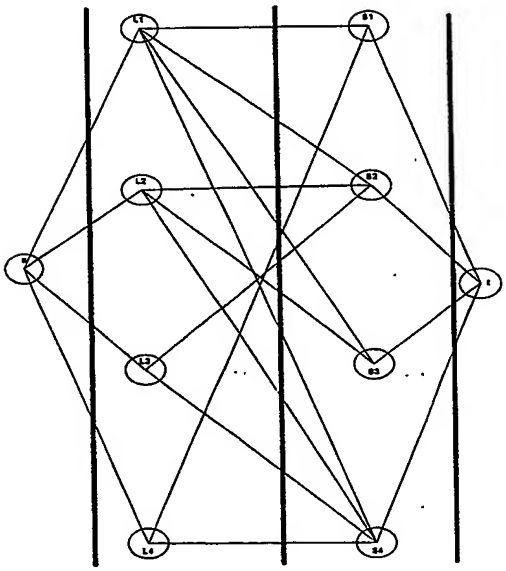


Fig. 6

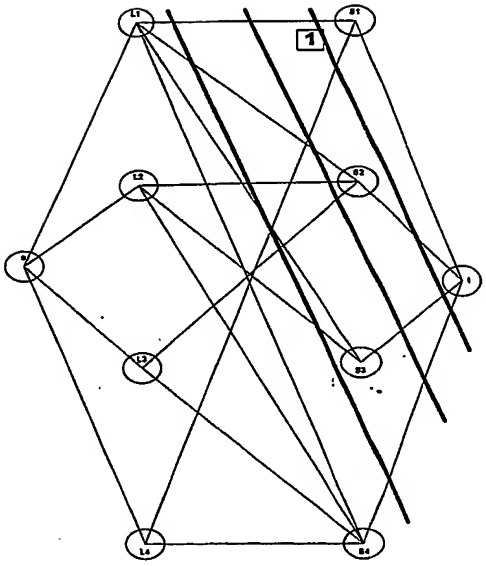


Fig. 7

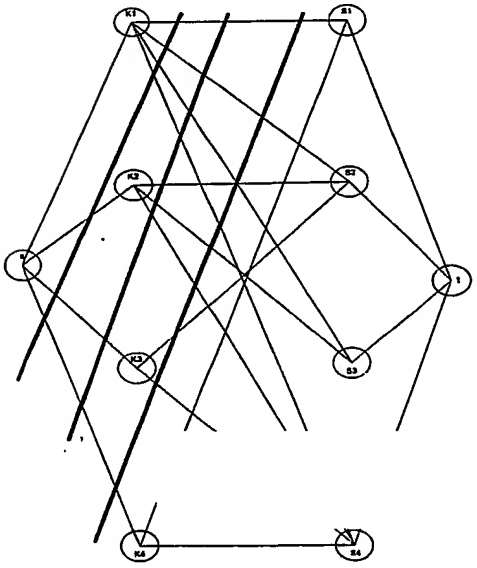


Fig. 8

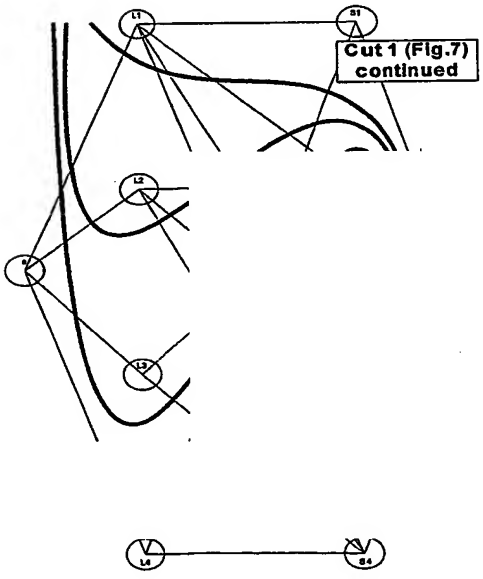
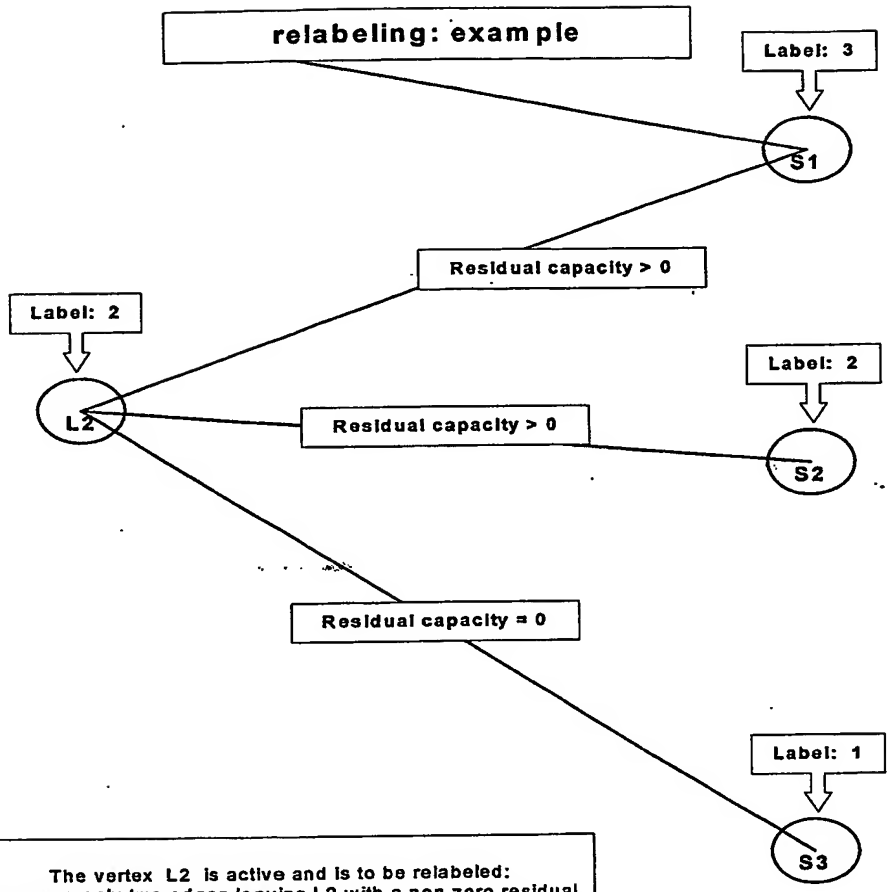
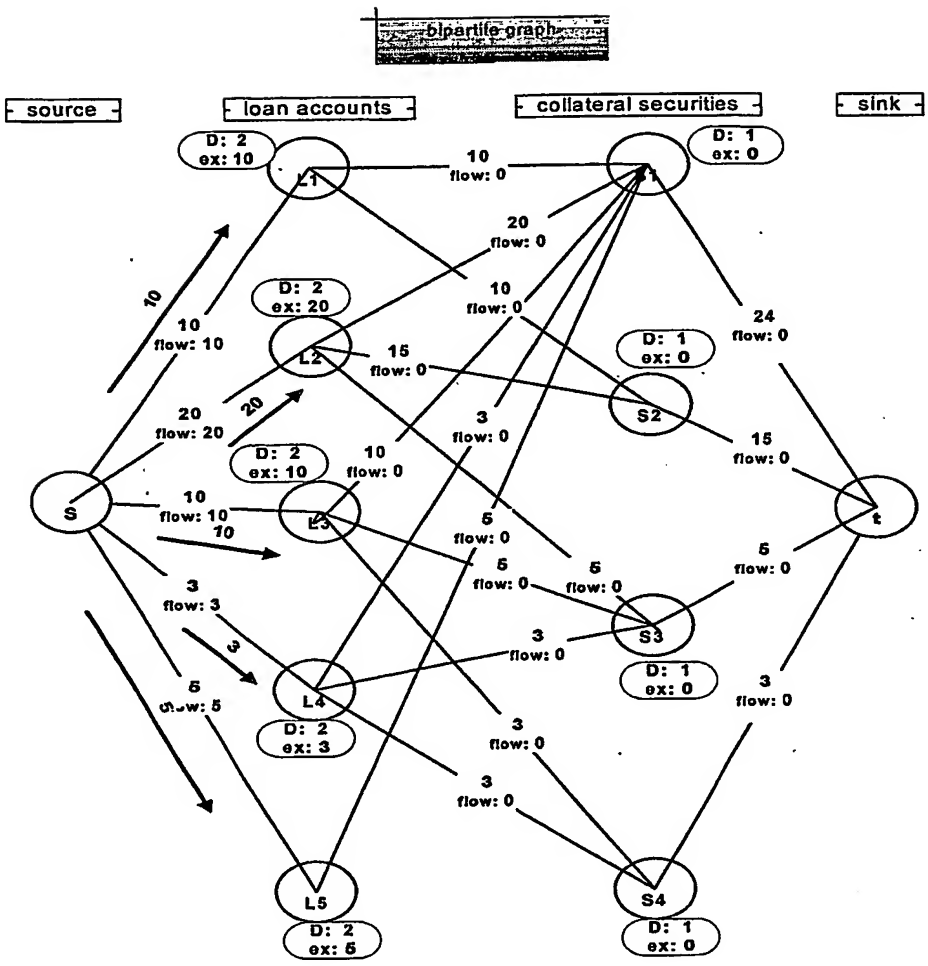


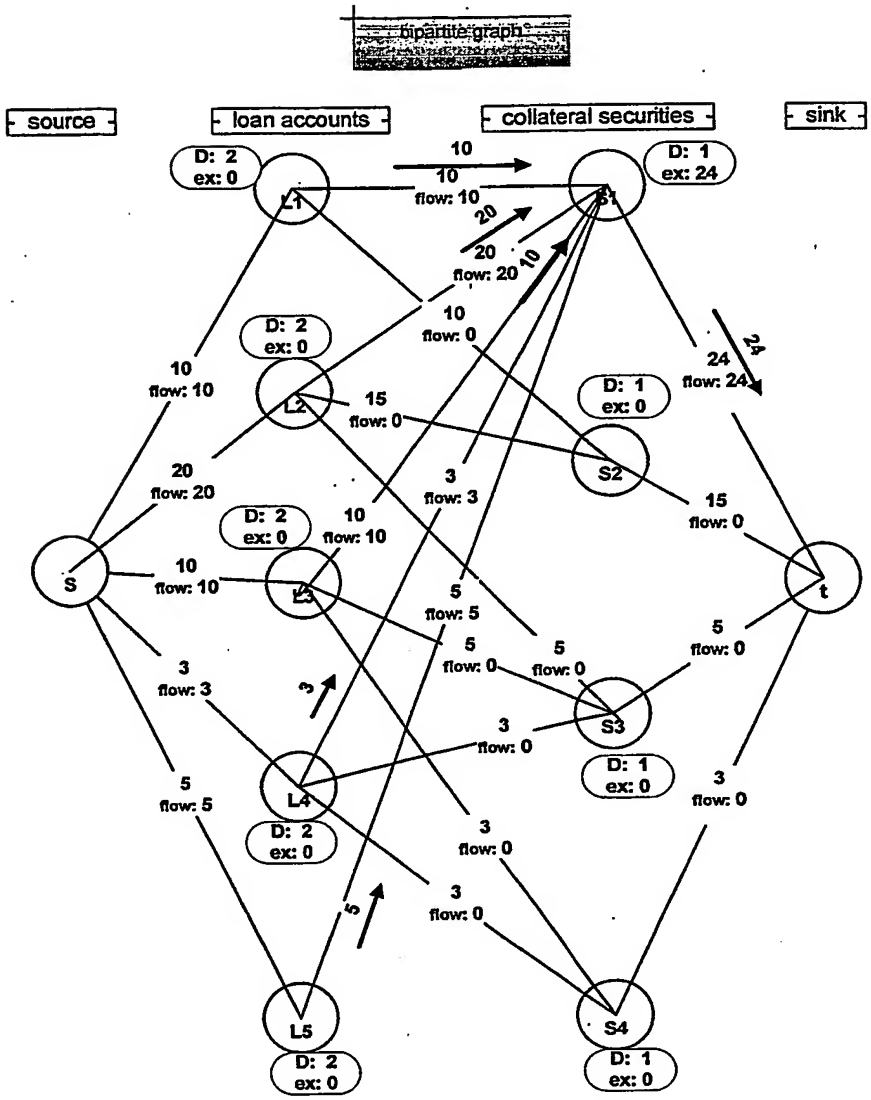
Fig. 9

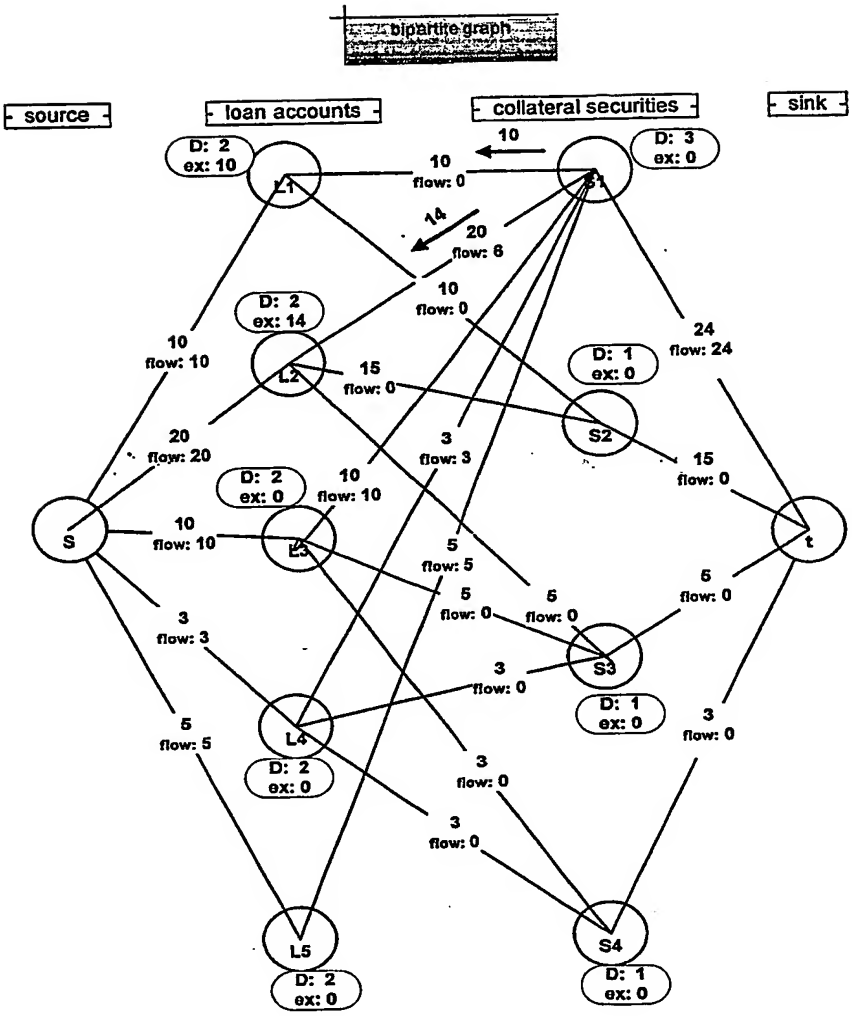


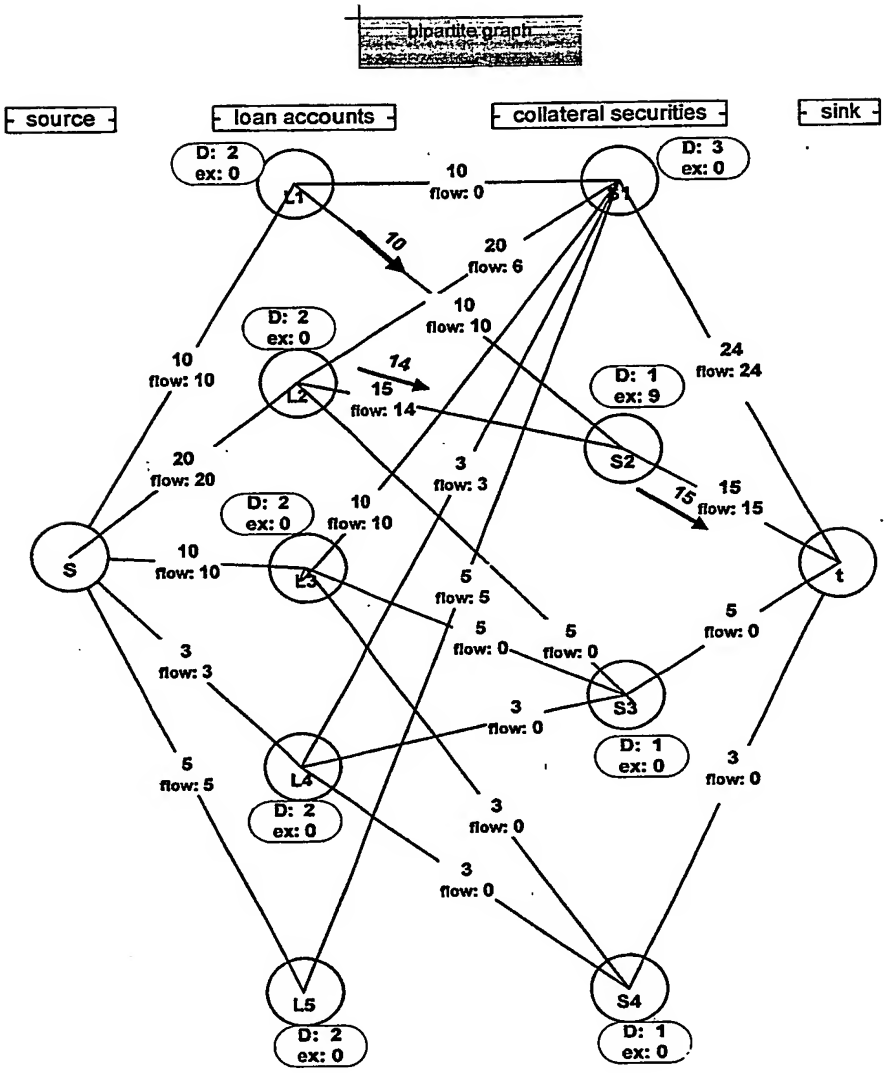
The vertex L2 is active and is to be relabeled:
There are only two edges leaving L2 with a non zero residual capacity: the edges leading to the vertices S1 and S2. The smallest label of those two vertices will be the basis for the relabeling operation of vertex L2: The new label will be the value of [label of S2] + 1:

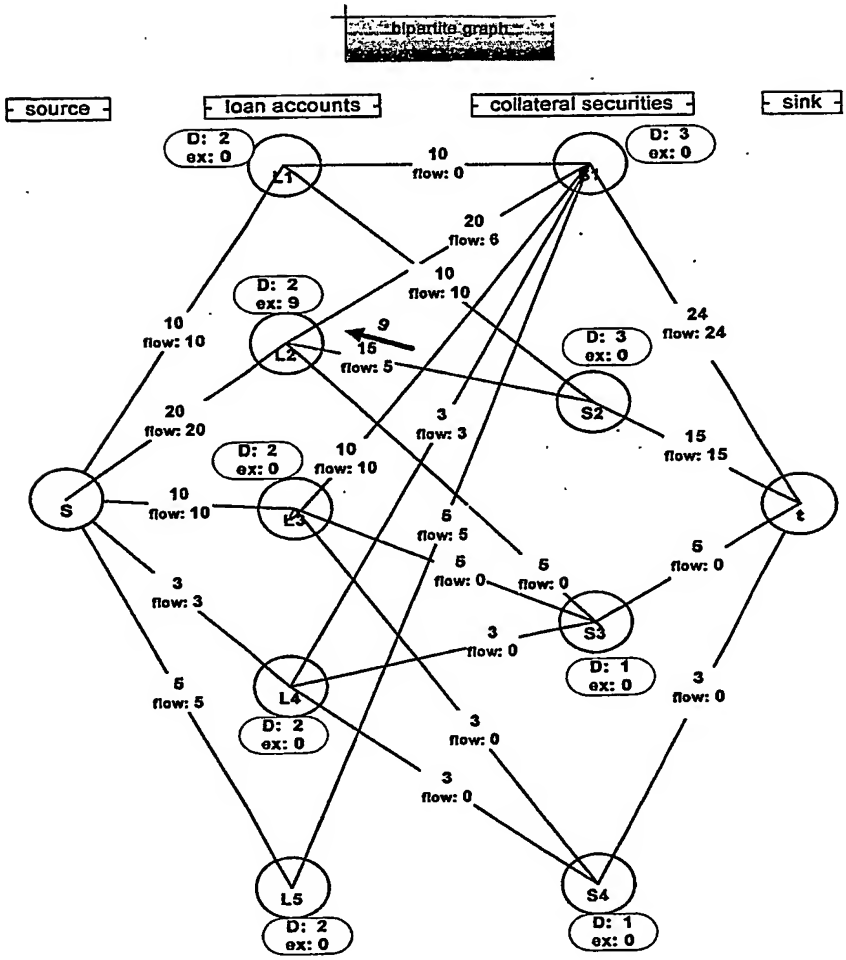
new label of L2 = 2 + 1 = 3

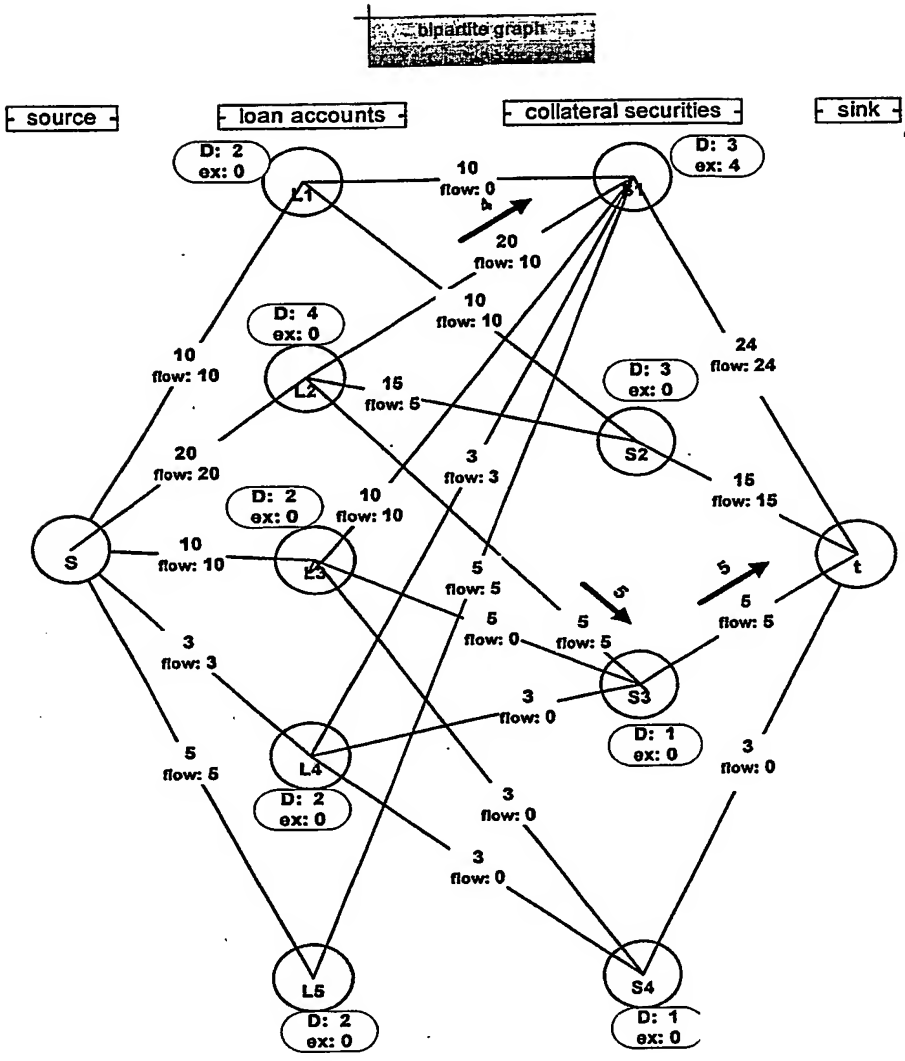

bipartite graph
source
loan accounts
collateral securities
sink
S
t
L1
L2
L3
L4
L5
S1
S2
S3
S4
D: 2 ex: 10
D: 2 ex: 20
D: 2 ex: 10
D: 2 ex: 3
D: 2 ex: 5
D: 1 ex: 0
D: 1 ex: 0
D: 1 ex: 0
D: 1 ex: 0
10 flow: 0
20 flow: 0
10 flow: 0
10 flow: 10
15 flow: 0
24 flow: 0
20 flow: 20
3 flow: 0
10 flow: 0
15 flow: 0
10 flow: 10
5 flow: 0
5 flow: 0
5 flow: 0
5 flow: 0
3 flow: 3
3 flow: 0
3 flow: 0
3 flow: 0
3 flow: 0
10
20
20
10
3
5
5


bipartite graph
source
loan accounts
collateral securities
sink
S
L1
L2
L3
L4
L5
S1
S2
S3
S4
t
D: 2 ex: 0
D: 1 ex: 24
D: 1 ex: 0
10 flow: 10
20 flow: 20
15 flow: 0
3 flow: 3
5 flow: 5
24 flow: 24
5 flow: 0
3 flow: 0


bipartite graph
source
loan accounts
collateral securities
sink
S
L1
L2
L3
L4
L5
S1
S2
S3
S4
t
D: 2 ex: 10
D: 2 ex: 14
D: 2 ex: 0
D: 2 ex: 0
D: 2 ex: 0
D: 3 ex: 0
D: 1 ex: 0
D: 1 ex: 0
D: 1 ex: 0
10 flow: 10
10 flow: 0
20 flow: 6
10 flow: 0
24 flow: 24
15 flow: 0
20 flow: 20
3 flow: 3
15 flow: 0
10 flow: 10
10 flow: 10
5 flow: 5
5 flow: 0
6 flow: 0
6 flow: 0
3 flow: 3
3 flow: 0
3 flow: 0
5 flow: 5
3 flow: 0
3 flow: 0


bipartite graph
source
loan accounts
collateral securities
sink
S
L1
L2
L3
L4
L5
S1
S2
S3
S4
t
D: 2 ex: 0
D: 3 ex: 0
D: 1 ex: 9
D: 1 ex: 0
10 flow: 0
10
20 flow: 6
10 flow: 10
24 flow: 24
14
15 flow: 14
20 flow: 20
3 flow: 3
15 flow: 15
15
10 flow: 10
10 flow: 10
5 flow: 5
5 flow: 0
5 flow: 0
5 flow: 0
3 flow: 3
3 flow: 0
5 flow: 5
3 flow: 0
3 flow: 0


bipartite graph
source
loan accounts
collateral securities
sink
D: 2
ex: 0
L1
10
flow: 0
S1
D: 3
ex: 0
20
flow: 6
10
flow: 10
D: 2
ex: 9
9
L2
15
flow: 5
D: 3
ex: 0
24
flow: 24
10
flow: 10
S2
20
flow: 20
3
flow: 3
15
flow: 15
D: 2
ex: 0
10
flow: 10
S
10
flow: 10
L3
t
5
flow: 5
5
flow: 0
5
flow: 0
5
flow: 0
3
flow: 3
S3
3
flow: 0
D: 1
ex: 0
5
flow: 5
L4
3
flow: 0
D: 2
ex: 0
3
flow: 0
3
flow: 0
L5
S4
D: 2
ex: 0
D: 1
ex: 0


bipartite graph
source
loan accounts
collateral securities
sink
S
L1
L2
L3
L4
L5
S1
S2
S3
S4
t
D: 2 ex: 0
D: 4 ex: 0
D: 2 ex: 0
D: 2 ex: 0
D: 2 ex: 0
D: 3 ex: 4
D: 3 ex: 0
D: 1 ex: 0
D: 1 ex: 0
10 flow: 0
20 flow: 10
10 flow: 10
10 flow: 10
24 flow: 24
15 flow: 5
20 flow: 20
3 flow: 3
15 flow: 15
10 flow: 10
10 flow: 10
5 flow: 5
5 flow: 0
5 flow: 5
5 flow: 5
3 flow: 3
3 flow: 0
5 flow: 5
3 flow: 0
3 flow: 0
3 flow: 0

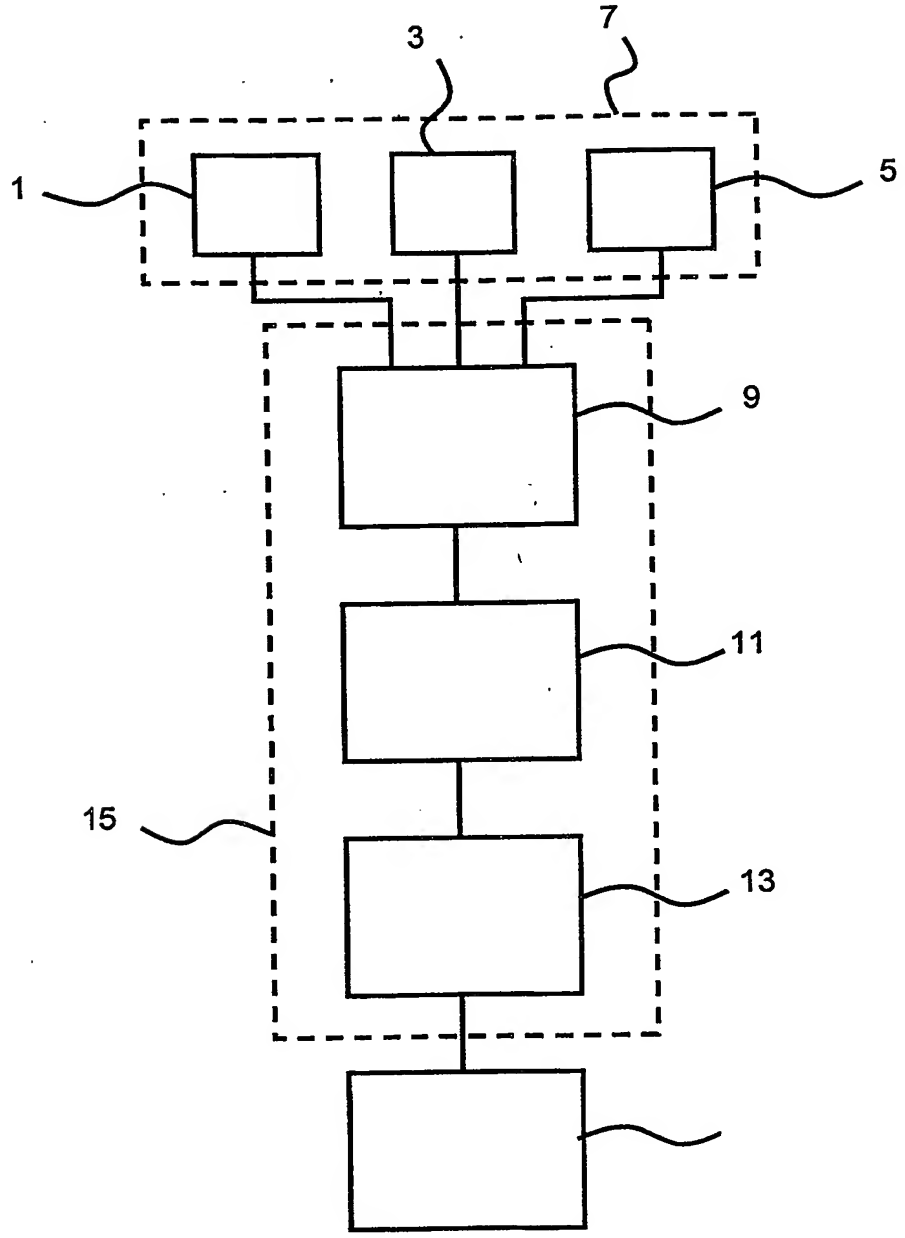


Fig. 17